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ABSTRACT

A study was conducted to determine if two specific factors had an effect on business teachers' perceptions of barriers to the implementation of a change. The two factors were the type of environment (type of school in which the teacher taught) and whether or not a change was perceived as being new or old. The change was implementation of a competency-based business curriculum. A proportional random sample of secondary, vocational-technical center, and community college business teachers in Florida were asked to respond to a perceived barriers scale and a measure of newness of the competency-based business curriculum. Two-way analysis of variance was used to analyze the data. Results indicated that environment had an effect on the perceptions of barriers. Vocational-technical center teachers saw significantly fewer barriers than did business teachers in the other two types of schools. Findings indicated that the concept of an idea as an innovation made little difference in whether teachers saw barriers to its implementation. No significant interaction effect of the two variables on teachers' perceptions of barriers to implementing the competency-based business education curriculum was found. (YLB)

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EFFECTS OF ENVIRONMENT AND STATUS OF INNOVATION ON PERCEIVED BARRIERS TO CHANGE

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EFFECTS OF ENVIRONMENT AND STATUS OF INNOVATION ON PERCEIVED BARRIERS TO CHANGE

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ABSTRACT

This study was conducted to determine if the type of enviornment and whether a change was perceived as a new idea had an effect on business teachers' perceptions of barriers to the implementation of the change.

A proportional random sample of secondary, vocational-technical center, and community college business teachers in Florida were asked to respond to a perceived barriers scale and a measure of newness of the competency-based business curriculum. Two-way Analysis of Variance was used to analyze the data.

Results indicated that environment had an effect on the perceptions of barriers while the perception of newness did not. There was no significant interaction effect of the two variables on teachers' perceptions of barriers to implementing the competency-based business education curriculum.

EFFECTS OF ENVIRONMENT AND STATUS OF INNOVATION

ON PERCEIVED BARRIERS TO CHANGE

Research has indicated that innovation adoption was directly related to the changes within the organization caused by the introduction of the practice or product (Duncan, Zaltman, & Holbeck, 1975). These changes included whether a reallocation of time, personnel, or money was required to implement the change. Innovations which required few organizational changes or which could be tried on a limited basis within the existing organizational structure have been found to be more acceptable (Kester & Howard, 1975; Reynolds, 1970; Rogers & Shoemaker, 1971).

School personnel have been found to be more inclined to adopt innovations which changed only parts of the existing operation as opposed to those which involved wide-spread changes within the organization (Reynolds, 1970). The less impact on established routine and control in the teacher's classroom by the innovation, the more readily that innovation was accepted by the teacher (Dodge, Bogden, & Brogden, 1974). Findings have also indicated that if the innovation was disruptive to established routines, required extra work for teachers, or required radical alterations in teaching approach the innovation was viewed negatively (Hill, 1971). Therefore, it appeared that the organizational structure in the school setting would be a determining factor in the perceptions of business teachers concerning barriers to curriculum innovation.

In investigating business teachers' perceptions of barriers to implementing a competency-based business curriculum, it was discovered that most of the literature available on the acceptance of innovation dealt with specific characteristics of the innovation (Ditzenberger, 1976; Kester & Howard, 1975; Rogers & Shoemaker, 1971) or with specific characteristics of the adopters (Harrell, 1981; Watson, 1981; Zimmerman, 1973). In much of the literature available on innovation acceptance and implementation, individuals had been classified as innovators or non-innovators (Rogers & Shoemaker, 1971; Russell, 1971) but little attention had been given to whether or not the individuals under study actually perceived the change under investigation as an innovation. The only exception found in the literature to this situation was to use the definition of an innovation as an idea, practice, or object perceived as being new by, at least, some of the individuals in a school setting (Zaltman, Duncan, & Holbeck, 1973).

The competency-based business curriculum under investigation was developed in Florida during the period of 1976 to 1983 as a response to the call for competency-based vocational programs in all discipline areas (Mills, 1975). This curriculum was designed around the competencies identified as essential by business and industry to prepare business students for entry into numerous business occupations (Head, 1980).

Although much of the competency-based business curriculum had been disseminated and inservice provided by 1983 (Slaugh, 1983), many questions remained regarding the reception of the curriculum change (innovation) and its implementation (acceptance) by vocational business teachers in Florida. Specifically, these questions included whether business teachers who taught in different types of school settings and who perceived competency-based

business education as a new or old idea had different perceptions of the barriers to implementation of the curriculum innovation. The objectives of the study were:

1. To determine whether the type of school in which business teachers taught affected their perceptions of barriers to a change in curriculum approach.
2. To determine whether business teachers' perceptions of a curriculum approach as being new or old would affect their perceptions of barriers to implementation of the approach.
3. To determine whether there was an interaction between the type of school and the perception of a curriculum approach as being new or old on teachers' perceptions of barriers to implementation of the approach.

Methods

Subjects

The population for this study included full-time business teachers at public secondary schools, vocational-technical centers administered by school districts, and community colleges in Florida. The total number of teachers in each group, as indicated by the Florida Educators' Information Service in 1981-1982, was 1315 secondary business teachers, 141 vocational-technical center business teachers, and 324 community college business teachers. Proportional sampling (Tuckman, 1972) was used to select the sample for the investigation. That sample included 151 secondary business teachers, 58 vocational-technical center business teachers, and 116 community college business teachers. Names of teachers for each subgroup were randomly selected by the Florida Educators' Information Service staff from the available listings of the 57 school districts and 24 community colleges which had agreed to allow their district/college to participate in the study.

Instruments

The survey instrument used in this study was composed of a demographic data section, a section of attitude statements representative of potential barriers to implementing the Florida Competencies for Business Education, and a section to gather information relative to teacher perceptions of competency-based vocational education.

Demographic Data. The demographic data section was used to obtain information concerning the type of school in which the instructor taught. The three types of schools were secondary, vocational-technical center, and community college.

Perceived Barriers Attitude Scale. Forty-seven attitudinal statements representing areas which might inhibit teachers' adoption and use of the innovation were written. Those items selected for this section of the questionnaire included areas identified by the Florida regional program specialists for business education (Minutes, Note 1), those identified through the literature, and those identified by the investigator during dissemination of the curriculum materials to teachers. The content included in the items represented materials and resources, administrative support, knowledge of the content and use of the materials, teacher and peer evaluation of the materials based on attributes and values, characteristics of the students, and organizational arrangements in the school setting. A four-point, forced response scale of 4, strongly agree, to 1, strongly disagree, was used for scoring purposes. Negative items were reversed in the scoring process. The attidudinal statements were also clustered into six subscales by a panel of judges for use in the analysis of the data obtained.

Competency-Based Vocational Education Questionnaire. The third part of the survey instrument was composed of statements relative to the teacher's definition of competency-based vocational education including whether the teacher perceived the idea of competency-based business education curriculum as a new or an old idea with a new name. Teachers were asked to check whether competency-based business education was an old or new idea and any statements which they felt best defined competency-based education.

Validation of the Instrument

The survey instrument composed of the demographic data section, the Perceived Barriers Attitude Scale, and the competency-based vocational education questionnaire was submitted to a panel of 10 judges who were familiar with the Competencies for Business Education for the purpose of establishing content validity. This panel was asked to review the sections of the survey instrument and make recommendations concerning clarity of instructions and items.

Panel members were also requested to rate the statements in the Perceived Barriers section as potential barriers which might prevent the acceptance and implementation of the competency-based curriculum materials. A form using a rating scale of 5, very appropriate as a barrier, to 1, not appropriate as a barrier, was provided. An average rating of 4 was used to determine whether the item should be included in the field test instrument. In addition, the panel was asked to group the 47 items into six categories: attributes of the innovation, additional resources, value of the innovation, inservice training, the consumer (user), and situational work factors. To be included in the survey instrument required that the

item be classified in a particular category by 70 percent of the panel members. Changes recommended by the panel, including the elimination of 17 items, were incorporated in the Perceived Barriers Attitude section.

Field Test

The survey instrument, when revised to reflect changes and panel of judges' suggestions, was field tested by a group of business teachers. Multiple copies of the instrument were mailed to four instructors of graduate level business education programs and one county supervisor who had expressed a willingness for their students (business teachers pursuing advanced training) or business teachers (those using the materials in the classroom) to participate in the field test. Fifty-three survey forms were returned. Five were eliminated because they were incomplete. The remaining 48 questionnaires were used in the field test analysis.

A four-point, forced response scale of 4, strongly agree, to 1 strongly disagree, was used for scoring the Perceived Barriers Attitude Scale portion of the questionnaire. Negative items in the scale were reversed for scoring purposes. Reliability for the total scores on the scale as well as individual clusters of items was computed using coefficient alpha. Reliability for the Perceived Barriers Attitude Scale was .92. Reliability for the six clusters of items were as follows: attributes of the innovation, .64; additional resources, .91; value of the innovation, .73; inservice training, .57; the consumer, .78; and situational work factors, .80.

Item-total correlations were also conducted for each item in the Perceived Barriers Attitude Scale to determine whether the item contributed to the overall reliability of the cluster. Changes indicated by this procedure were incorporated in the final survey form. Responses to items in

the competency-based vocational education section of the questionnaire were tabulated to determine the teachers' understanding of the statements and the degree to which items were checked.

Survey Procedures

The survey was mailed with a cover letter to the proportional random sample of 325 business teachers which had been selected. Of the 325 questionnaires mailed, 259 (80%) were returned. Two hundred seventeen (67% of the 325 questionnaires mailed) contained usable data. Of those, 115 came from secondary business teachers; 46 from vocational-technical center business teachers; and 56 from community college business teachers. Of the respondents, 63 stated that competency-based business education was a new process; 154 felt it was an old process with a new name.

Findings

A two-way Analysis of Variance, utilizing the SPSS package at Florida State University, was carried out for total scores on the Perceived Barriers Attitude Scale as well as for each of the subscales within the instrument. The independent variables were type of school (3) and teacher perception of competency-based business education as a new or old process (2). The analysis of total scores indicated there was a statistically significant difference in the perceptions of teachers in the three types of schools toward barriers to competency-based business education curriculum implementation; $F(2,216) = 11.63$, $p = .001$. However, review of the analysis, indicated there was no significant main effect for newness of the idea of competency-based business education No significant interaction effect of the two variables on teachers' perception of barriers to implementing the

competency-based curriculum was indicated by the analysis. Table 1 presents the ANOVA summary for total scores of the three groups on the Perceived Barriers Attitude Scale.

Table 1

ANOVA Summary Table for Teacher Perceptions of Barriers

Source	Sum of Squares	Degrees of Freedom	Mean Square	F	F Significance
Main Effects	3.702	3	1.234	7.754	.001
Type of School	3.702	2	1.851	11.630	.001
Old/New	.000	1	.000	.000	.983
2-way Interaction	.401	2	.201	1.260	.286
Explained	4.103	5	.821	5.157	.001
Residual	33.577	211	.159		
Total	37.680	216	.174		

Using Eta squared (η^2), 10% of the variance in scores on the Perceived Barriers Attitude Scale was accounted for by the type of school at which the teacher taught. Mean scores for each teacher group on total scores are presented in Table 2.

Table 2

Mean Scores for All Teacher Groups

Type of School	Old		New		Total	
	n	Mean	n	Mean	n	Mean
Secondary	85	2.65	30	2.72	115	2.67
Vocational-Technical	34	2.98	12	3.09	46	3.00
Community College	35	2.84	21	2.70	56	2.77
All Groups	154	2.75	63	2.78	217	2.76

A Newman-Keuls post hoc test was conducted to determine whether the strength of difference among teachers in the three types of schools was significant ($p < .05$) for total scores. The test indicated that the mean score for vocational-technical center business teachers differed significantly from those of secondary and community college teachers. Vocational-technical center business teachers saw fewer barriers to implementing the competency-based business curriculum than did either secondary or community college business teachers. No significant difference was found to exist between secondary and community college business teachers in their overall attitudes toward barriers to competency-based business curriculum implementation.

Since items in the Perceived Barriers Attitude Scale had been grouped into six clusters (subscales) of items representative of barriers to competency-based business curriculum implementation, two-way Analysis of Variance was conducted to determine whether there were significant differences in the perceptions of the teacher groups by type of school and the concept of competency-based business education as old or new.

Analysis of the clusters indicated there were significant differences ($p < .05$) among the teacher groups for type of school on cluster 2 (additional resources), $F(2,216)$ 4.621, $p = .01$; cluster 3 (value of the innovation), $F(2,216)$ 15.028, $p = .001$; cluster 5 (the consumer), $F(2,216)$ 4.933, $p = .008$; and cluster 6 (situational work factors), $F(2,216)$ 8.486, $p = .001$. No significant effect was obtained for perception of the idea as old or new. These analyses also indicated the lack of a significant interaction effect of the two variables on teachers' perception of barriers to implementing competency-based business curriculum for any of the six clusters of items contained in the Perceived Barriers Attitude Scale.

Table 3 presents the data for the anslysis of each of the six clusters contained in the Perceived Barriers Attitude Scale.

Using Eta squared (η^2) the variance accounted for in the clusters where type of school was listed as significant was as follows: cluster 2, additional resources, 4%; cluster 3, value of the innovation, 12%; cluster 5, the consumer, 4%; and cluster 6, situational work factors, 7%. Mean scores for each teacher group are presented in Table 4.

The post hoc test was conducted for each of the clusters of items where type of school was indicated as significant ($p < .05$). That test indicated that there was no significant difference among teacher groups for any of the subscales of items. Vocational-technical center teachers, however, scored higher and saw fewer barriers in all categories of items than did secondary or community college business teachers.

Table 3

ANOVA Summary Table for Teacher Perceptions of Barriers by Subscale

Source	Sum of Squares	Degrees of Freedom	Mean Square	F	F Significance
Cluster 1 - Attributes					
Main Effects	5.214	3	1.738	.876	.454
Type of School	4.650	2	2.325	1.172	.312
Old/New	.583	1	.583	.294	.588
2-way Interaction	2.893	2	1.446	.729	.484
Explained	8.107	5	1.621	.817	.539
Residual	418.603	211	1.984		
Total	426.710	216	1.976		
Cluster 2 - Resoruces					
Main Effects	289.705	3	96.568	3.082	.028
Type of School	289.556	2	144.778	4.621	.011
Old/New	.885	1	.885	.028	.867
2-way Interaction	159.788	2	79.894	2.550	.080
Explained	449.494	5	89.899	2.869	.016
Residual	6611.004	211	31.332		
Total	7060.498	216	32.687		
Cluster 3 - Value					
Main Effects	372.086	3	124.029	10.604	.001
Type of School	351.569	2	175.785	15.028	.001
Old/New	16.944	1	16.944	1.449	.230
2-way Interaction	13.939	2	6.970	.596	.552
Explained	386.025	5	77.205	6.601	.001
Residual	2468.030	211	11.697		
Total	2854.055	216	13.213		
Cluster 4 - Inservice					
Main Effects	8.752	3	2.917	1.942	.124
Type of School	7.600	2	3.800	2.530	.082
Old/New	1.130	1	1.130	.753	.387
2-way Interaction	7.110	2	3.555	2.367	.096
Explained	15.861	5	3.172	2.112	.065
Residual	316.904	211	1.502		
Total	332.765	216	1.541		
Cluster 5 - Consumer					
Main Effects	131.056	3	43.685	3.628	.014
Type of School	118.812	2	59.406	4.933	.008
Old/New	11.409	1	11.409	.947	.331
2-way Interaction	20.006	2	10.003	.831	.437
Explained	151.062	5	30.212	2.509	.031
Residual	2540.772	211	12.042		
Total	2691.834	216	12.462		
Cluster 6 - Work Factors					
Main Effects	112.733	3	37.578	5.677	.001
Type of School	112.345	2	56.173	8.486	.001
Old/New	.017	1	.017	.003	.959
2-way Interaction	3.318	2	1.659	.251	.779
Explained	116.051	5	23.210	3.506	.005
Residual	1396.714	211	6.619		
Total	1512.765	216	7.004		

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Table 4

Cluster Means - All Teacher Groups

Cluster	n	Secondary	n	Vocational-Technical	n	Community College	n	Total
Cluster 1								
Old	85	2.52	34	2.75	35	2.77	154	2.63
New	30	2.82	12	2.88	21	2.76	63	2.81
Total	115	2.60	46	2.78	56	2.76	217	2.68
Cluster 2								
Old	85	2.79	34	3.10	35	2.89	154	2.88
New	30	2.92	12	3.28	21	2.74	63	2.93
Total	115	2.82	46	3.14	56	2.81	217	2.89
Cluster 3								
Old	85	2.71	34	3.12	35	2.95	154	2.86
New	30	2.83	12	3.29	21	2.95	63	2.96
Total	115	2.75	46	3.17	56	2.95	217	2.89
Cluster 4								
Old	85	2.65	34	2.85	35	2.87	154	2.74
New	30	2.45	12	3.09	21	2.55	63	2.61
Total	115	2.60	46	2.91	56	2.75	217	2.70
Cluster 5								
Old	85	2.79	34	3.07	35	2.98	154	2.90
New	30	2.76	12	3.10	21	2.66	63	2.79
Total	115	2.78	46	3.08	56	2.86	217	2.86
Cluster 6								
Old	85	2.19	34	2.59	35	2.47	154	2.34
New	30	2.25	12	2.58	21	2.41	63	2.37
Total	115	2.20	46	2.58	56	2.45	217	2.35

Discussion and Conclusions

There was only one significant difference among teachers in secondary schools, vocational-technical centers, and community colleges as shown by the analysis of data. That difference was between vocational-technical center business teachers and secondary and community college business teachers on total scores for the Perceived Barriers Attitude Scale. Vocational-technical center teachers saw significantly fewer barriers to implementing competency-based business education curriculum than did business teachers in the other two types of schools.

No significant differences were found among the three teacher groups for any of the subscales contained in the Perceived Barriers Attitude Scale; however, vocational-technical center business teachers consistently scored higher and saw fewer barriers as measured by each of the subscales. Mean scores on each subscale were higher and more positive for this group than for either community college or secondary business teachers. Secondary business teachers consistently scored lower and saw more barriers on total scores and on each subscale. Community college business teachers' responses were mixed, depending upon the subscale.

A possible reason for vocational-technical center business teachers' perception of fewer barriers to competency-based business education might lie in the organizational structure of the three types of schools in Florida. Vocational-technical centers are organized for open-entry, open-exit programs; variable time frames; smaller teacher loads; and individualized instruction which are characteristic of competency-based education. Some community colleges are designated as area vocational centers while others are not. In those community colleges designated as area centers,

both credit and non-credit (certificate) programs are operated, especially in the skill subjects contained in the business programs.

Secondary schools, however, are organized along more traditional lines with specified period lengths, credit assignments to courses (not programs), more students per instructor, and large-group instruction. Thus, organizational structure could account for some of the differences in perceptions of barriers to competency-based business education by the three groups of teachers. As indicated in the literature, the fewer organizational changes an innovation required, the more readily teachers would tend to adopt and implement that innovation (Hill, 1971; Kester & Howard, 1975; Reynolds, 1970; Rogers & Shoemaker, 1971).

No significant differences were found among teacher groups based upon their perceptions of competency-based business education as an old or new idea. It was observed, however, that those business teachers in all three types of schools who saw competency-based business education as a new idea tended to score slightly higher or see fewer barriers than did those who viewed competency-based business education as an old idea. This finding would tend to indicate that the concept of an idea as an innovation made little difference in whether teachers saw barriers to its implementation. It has also been suggested that business education is already based on set standards (e.g., words per minute, mailability, etc.) and that the concept of competency-based education already exists at least in the skill areas (Jorgensen & Schmidt, 1981).

In conclusion, this study did not provide enough evidence to determine whether the organizational school setting did in fact affect perceptions of barriers to competency-based business education curriculum implementation. The possibility does exist, however, that further research on a wider scale

would yield more conclusive evidence to support the idea of organizational setting as a determinant of innovation acceptance and implementation.

It is recommended that additional studies be conducted to determine if an idea or practice is an innovation (new) to determine whether this factor does affect implementation of the idea. Also, additional research should be conducted to determine when an "innovation" is in actuality an innovation since no clear definition is given in the literature.

One further recommendation for additional research is more in-depth analyses of sc l organizational structures to determine the degree of impact that school structure may have on innovation acceptance and implementation.

REFERENCE NOTES

1. Minutes. Business Education Staff Meetings, Division of Vocational Education, Florida Department of Education, 1979, 1980, and 1981.

REFERENCES

Dietzenberger, R. Perceived barriers to implementing a distributive education competency-based learning system. (Doctoral dissertation, The Iowa State University, 1976).

Dodge, M., Bogdan, R., & Brogden, N. How teachers perceive media. Educational Technology, 1974, 14(1), 21-24.

Harrell, L. W. The development of a revised management plan for the implementation of the Florida automotive mechanics curriculum. (Doctoral dissertation, NOVA University, 1981).

Head, C. E. Business education. Florida Vocational Journal, 1980, 6(1), 13-16.

Hill, D. Teachers as change agents. Clearing House, 1971, 45(7), 52-27.

Jorgensen, C. E., & Schmidt, B. J. Developing competency-based objectives and evaluation methods. In Updating content in secondary business education. Reston: National Business Education Association, 1981, 110-120.

Kester, R. J., & Howard, J., Jr. Evaluating the process of educational change: A model and its applications. Paper presented to the American Educational Research Association, Washington, D. C., March, 1975.

Mills, J. D. Competency-based vocational education: Miracle or monster. Florida Vocational Journal, 1975, 1(2), 5-10.

Reynolds, J. J. A study of factors affecting the adoption of educational innovations in selected secondary schools. Unpublished Ed.D. dissertation, Indiana University, 1970.

Rogers, E. M., & Shoemaker, F. F. Communication of innovation. New York: The Free Press, 1971.

Russell, E. B. Development of an instrument to measure the change orientation of vocational teachers. (Doctoral dissertation, The Ohio State University, 1971).

Slaugh, L. A. C. Perceived barriers to implementing Florida's competency-based business education curriculum. (Doctoral dissertation, The Florida State University, 1983).

Tuckman, B. W. Conducting educational research. New York: Harcourt Brace Jovanovich, Inc., 1972

Watson, P. K. Perceptions of a proposed plan for a competency-based vocational education system: Analysis of survey results. (Doctoral dissertation, The Florida State University, 1982).

Zaltman, G., Duncan, R., & Holbek, J. Innovation and organizations. New York: John Wiley and Sons, 1973.

Zimmerman, R. E. Perceptions and personality characteristics associated with innovation. Ph.D. dissertation, The university of North Dakota, Dissertation Abstracts International, 1971, 31(12), 6461-A.